

APPENDIX A

CURRICULUM VITAE

Date of Birth: January 8, 1956;
Place of Birth: Lignitza, Poland
Date of Immigration: June 15, 1957
Identity number: 0-6467377-5
Nationality: Israeli
Family Status: Married plus two
Military Service: Israel Defense Forces, 1073-1976
Permanent Address: 24/7 Nehagae Haperdoth St.
Jerusalem, 97890.
Telephone: 02-5823327 (H), 02-6757465 (W)
Fax: 02-5325065 (H); 02-6415848 (W)
E-mail address: hayalg@md2.huji.ac.il

Education:

1976-1979 Studies at the Hebrew University of Jerusalem, Faculty of Science.
Subject: Biology, Biochemistry, Molecular Biology.
1979 B.Sc. Degree
1980-1986 Work on Ph.D. thesis, in the Department of Biological Chemistry, Institute of
Life Sciences, Hebrew University (direct Ph. D program).
Supervisors: Profs. N. de Groot and A. Hochberg
Title: Metabolism of RNA in human placenta.
1986 Ph. D. degree.
1986-1989 Post Doctoral Fellowship: at the Laboratory of Molecular Biology, DCBD, NCI,
NIH.
Host: Dr. Ira Pastan.

Brief Chronology of Employment:

1979-1982 - Assistant, Laboratory of Biological Chemistry.
1982-1985 - Instructor, Laboratory of Biological Chemistry.

- 1.10.1989 Lecturer at the Department of Cellular Biochemistry, Hebrew-University, Hadassah Medical School.
- 1991 Senior Lecturer at the Department of Cellular Biochemistry, Hebrew-University, Hadassah Medical School (non-tenured) .
- 26.3.1997 Senior Lecturer at the Department of Cellular Biochemistry, Hebrew-University, Hadassah Medical School (permanent position).

1994-1998 - Chairman of Biochemistry, Hebrew University- Hadassah Medical School.

1998-present Head, Department of Cellular Biochemistry and Human Genetics.

Awards:

- 1982 Berger Award for Graduates.
- 1984 EMBO short term Fellowship.
- 1986-1989 Fogarty Fellowship.
- 1989-1993 Allon Fellowship (1st in the national list awarded).
- 1996-1997 Excellent teacher in the Faculty of Medicine.
- 1997-1998 Excellent teacher in the Faculty of Medicine.
- 1999 Special award for excellence in teaching (based on 3 years evaluation)

LIST OF PUBLICATIONS

1. Lorberboum, H., Weinstein, D., de Groot, N., Folman, R. and Hochberg, A.A.: Localization mRNA encoding the α - and β - hCG subunits in human placenta. *Israel J. Med. Sci.* 17: 493, 1981.
2. Weinstein, D., Galski, H., Schenker, J.G., Lorberboum, H., de Groot, N., Ilan, J., Folman, R. and Hochberg, A.A.: The synthesis and secretion of human placental lactogen (hPL) in cultured term placenta. *Mol. Cell Endocrinol.* 26: 189-199, 1982.
3. Lorberboum, H., Weinstein, D., Galski, H., de Groot, N., Segal, S., Ilan, J., Folman, R. and Hochberg, A.A.: RNA synthesis in cultured human placenta. *Mol. Biol. Rep.* 8: 103-110, 1982.
4. Lorberboum, H., Weinstein, D., de Groot, N. and Hochberg, A.A.: Messenger ribonucleoprotein particles in human term placenta. *Biochem. Internatl.* 5: 404-414, 1982.
5. Galski, H., Weinstein, D., Gileadi, O., Lorberboum, H., de Groot, N., Folman, R. and Hochberg, A.A.: Phosphorylation of proteins in cultured human placenta. *Biochem. Internatl.* 5: 137-143, 1982.
6. Gileadi, O., Lorberboum, H., de Groot, N. and Hochberg, A.A.: Location of RNase and RNase inhibitor on free cytoplasmic mRNA protein particles from human placenta. *Mol. Biol. Rep.* 9: 241-244, 1984.
7. Lorberboum, H., Schneider, T., de Groot, N. and Hochberg, A.A.: The effect of protein and RNA synthesis inhibitors on the synthesis and secretion of hCG, α - and β - hCG subunits, in organ culture. *Eur. J. Obstet. Gynec. Reprod. Biol.* 18: 57-69, 1984.
8. Lorberboum, H., Galski, H., Scharf, C., Weinstein, D., de Groot, N. and Hochberg, A.A.: Alkaline phosphatase and protein kinase(s) activities in free cytoplasmic mRNPs from human term placenta. *Mol. Biol. Rep.* 11: 29-35, 1986.
9. Lorberboum, H., Digweed, M., Erdmann, V.A., Servadio, Y., Weinstein, D., de Groot, N. and Hochberg, A.A.: Small cytoplasmic RNAs from human placental free mRNPs. Structure and their effect on in vitro protein synthesis. *Eur. J. Biochem.* 155: 279-287, 1986.
10. Kloppstech, K., Lorberboum, H., de Groot, N. and Hochberg, A.A.: Small cytoplasmic RNAs from human placental free mRNPs. Translational control at the level of initiation between mRNAs for pre-existing proteins and a 22-kDa heat shock protein of Chlamydomonas. *Eur. J. Biochem.* 167: 501-505, 1987.

11. Lorberboum-Galski, H., Fitzgerald, D., Chaudhary, V., Adhya, S. and Pastan, I.: Cytotoxic activity of an interleukin 2-Pseudomonas exotoxin chimeric protein produced in Escherichia coli. *Proc. Nat. Acad. Sci. U.S.A.* 85: 1922-1926, 1988.
12. Lorberboum-Galski, H., Kozak, R.W., Waldmann, T.A., Bailon, P., Fitzgerald, D.J.P. and Pastan, I.: IL2-PE40 is cytotoxic to cells displaying either the p55 or p70 subunit of the IL2 receptor. *J. Biol. Chem.* 263: 18650-18656, 1988.
13. Bailon, P., Weber, D.V., Gately, M., Smart, J.E., Lorberboum-Galski, H., Fitzgerald, D. and Pastan, I.: Purification and partial characterization of an interleukin 2-Pseudomonas exotoxin fusion protein. *Biotechnol.* 6: 1326-1329, 1988.
14. Ogata, M., Lorberboum-Galski, H., Fitzgerald, D.J.P. and Pastan, I.: IL2-PE40 is cytotoxic for activated T-lymphocytes expressing IL2 receptors. *J. Immunol.* 141: 4224-4228, 1988.
15. Case, J.P., Lorberboum-Galski, H., Lafyatis, R., Fitzgerald, D., Wilder, R.L. and Pastan, I.: Chimeric cytotoxin IL2-PE40 prevents adjuvant arthritis in rats. *Proc. Natl. Acad. Sci. U.S.A.* 86: 287-291, 1989.
16. Lorberboum-Galski, H., Barret, L., Kirkman, R., Ogata, M., Willingham, M., Fitzgerald, D. and Pastan, I.: Cardiac allograft survival in mice treated with IL2-PE40. *Proc. Nat. Acad. Sci. U.S.A.* 86: 1008-1012, 1989.
17. Roberge, F.G., Lorberboum-Galski, H., Phoan, P.L., de Smet, M., Chan, C.C., Fitzgerald, D. and Pastan, I.: Selective immunosuppression of activated T cells with the chimeric toxin IL2-PE40. Inhibition of experimental autoimmune uveoretinitis (EAU). *J. Immunol.* 143: 3498-3502, 1989.
18. Lorberboum-Galski, H., Garsia, R.J., Gately, M., Brown, P.S., Clark, R.R., Waldmann, T.A., Fitzgerald, D.J.P. and Pastan, I.: IL2-PE66^{4Glu}, a new chimeric protein cytotoxic to human activated T lymphocytes. *J. Biol. Chem.* 265: 16311-16317, 1990.
19. Kozak, R.W., Lorberboum-Galski, H., Jones, L., Puri, R.K., Willingham, M.C., Malek, T., Fitzgerald, D.J., Waldmann, T.A. and Pastan, I.: IL2-PE40 prevents the development of tumors in mice injected with IL2 receptor expressing EL4 transfectant tumor cells. *J. Immunol.* 145: 2766-2771, 1990.
20. Lorberboum-Galski, H., Lafyatis, R., Case, J.P., Fitzgerald, D., Wilder, R.L. and Pastan, I.: Administration of IL2-PE40 via osmotic pumps prevents adjuvant induced arthritis in rats. Improved therapeutic index of IL2-PE40 administered by continuous infusion. *Intern. J. Immunophar.* 13: 305-316, 1991.
21. Beraud, E., Lorberboum-Galski, H., Chan, C.C., Fitzgerald, D., Pastan, I. and Nussenblatt, R.B.: Immunospecific suppression on encephalitogenic activated T lymphocytes by chimeric cytotoxin IL2-PE40. *Cellular Immunol.* 133: 379-389, 1991.

22. Rose, J.W., Lorberboun-Galski, H., Fitzgerald, D., McCarron, R., Hill, K.E., Townsend, J.J., and Pastan, I.: Chimeric cytotoxin IL2-PE40 inhibits relapsing experimental allergic encephalomyelitis. *J. Neuroimmunol.* 32: 209-217, 1991.
23. Herbolt, C.P., de Smet, M.D., Roberge, F.G., Nussenblatt, R.B., Fitzgerald, D., Lorberboun-Galski, H. and Pastan, I.: 0 of corneal allograft rejection with cytotoxic IL2-PE40. *Transplantation* 52: 470-474, 1991.
24. Amiel, A., Yarkoni, S., Slavin, S., Or, R., Lorberboun-Galski, H., Fejgin, M. and Nagler, A.: Detection of minimal residual disease state in chronic myelogenous leukemia patients using fluorescent in situ hybridization. *Cancer Genet. & Cytogenet.* 76: 59-64, 1994.
25. Fishman, A., Bar-Kana, Y., Steinberger, I. and Lorberboun-Galski, H.: Increased cytotoxicity of interleukin 2-Pseudomonas exotoxin (IL2-PE40) chimeric proteins containing a targeting signal for lysosomal membranes. *Biochemistry U.S.A.* 33: 6235-6243, 1994.
26. Lorberboun-Galski, H.: Interleukin 2-Pseudomonas exotoxin A (IL2-PE40) chimeric protein for targeted immunotherapy and the study of immune responses. *J. Toxicol.-Toxin Reviews* 13(1): 105-109, 1994.
27. Volk, H.-D., Muller, S., Yarkoni, S., Diamantstein, T. and Lorberboun-Galski, H.: Mechanism of dichotomic action of interleukin-2-pseudomonas exotoxin 40 (IL2-PE40) on cell mediated and humoral immune response. *J. Immunol.* 153: 2497-2505, 1994.
28. Lorberboun-Galski, H., Yarkoni, S., Nechushtan, A., Rachmilewitz, J., de Groot, N and Hochberg, A.: ABL and BCR genes are not imprinted in androgenetic and gynogenetic human tissues. *Biochem. Bioph. Res. Commun.* 204: 621-627, 1994.
29. BenEzra, D., Maftzir, G., Hochberg, E., Anteby, I. and Lorberboun-Galski, H.: Ocular distribution of the chimeric protein IL2-PE40. *Curr. Eye Res.* 14: 153-158, 1995.
30. Abdul-Hai, A., Lorberboun-Galski, H., Nechushtan, A., Weiss, L., Slavin, S. and Or, O.: Involvement of IL-2 in immunologic reconstitution following bone marrow transplantation in mice. *J. Interferon and Cytokine Res.* 15: 95-101, 1995.
31. Steinberg, I., Brenner, T. and Lorberboun-Galski, H.: Interleukin 2-Pseudomonas exotoxin chimeric protein is cytotoxic to B cell cultures derived from Myasthenia Gravis patients. *J. Neurol. Sci.*, 133, 183-191, 1995.
32. Steinberger, I., Brenner, T. and Lorberboun-Galski, H.: Interleukin 2-Pseudomonas exotoxin (IL2-PE66^{4Glu}) chimeric protein kills B cells from patients with Myasthenia Gravis. *Cellular Immunol.* 169, 55-61, 1996.
33. Yarkoni, S., Lishner, M., Tangi, I., Nagler, A. Lorberboun-Galski, H.: B-cell Non-Hodgkin lymphoma: Evidence for the t(14;18) translocation in cell hematopoietic lineages. *J. Nat. Canc. Inst.* 88, 973-979, 1996.

34. Fishman, A. and Lorberboun-Galski, H.: Targeted elimination of Fc α RI expressing cells by a Fc α -PE40 chimeric protein--a new approach for therapy of allergic responses. *Eur. J. Immunol.* 27, 486-494, 1997.
35. Nechushtan, A., Yarkoni, S., Marianovksy and Lorberboun-Galski, H.: Adenocarcinoma cells are targeted by the new GnRH-PE66 chimeric toxin through specific gonadotropin-releasing hormone binding sites. *J. Biol. Chem.* 272, 11597-11603, 1997.
36. Steinberger, I., Ben-Bassat, H., Hochberg, E and Lorberboun-Galski, H.: Interleukin 2 receptor-- α , β and γ subunit expression as a function of B cell lineage ontogeny; The use of IL2-PE66^{4Glu} to characterize internalization via IL2 receptor subunits. *Scan. J. Immunol.* 46, 129-136, 1997.
37. Ben-Yehudah, A., Yarkoni, S., Nechushtan, A., Belostotsky, R. and Lorberboun-Galski, H.: Linker-based GnRH-PE chimeric proteins inhibit cancer growth in nude mice. *Med. Oncol.* 16: 38-45, 1999.
38. Brenner, T., Steinberger, I., Soffer, D., Beraud, E., Ben-Nun, A., Lorberboun-Galski, H.: A novel antigen-toxin chimeric protein: Myelin Basic Protein-Pseudomonas exotoxin (MBP-PE40) for treatment of experimental autoimmune encephalomyelitis. *Immunol. Letters*, 68: 403-410, 1999.
39. Aqelian, R., Yarkoni, S. and Lorberboun-Galski, H. Interleukin 2-Bax: a novel prototype of human chimeric proteins for targeted therapy. *FEBS Letters* 457: 271-276, 1999.
40. Fishman, A., Prus, D. Belostotsky, R. and Lorberboun-Galski, H. Targeted Fc₂₋₃-PE chimeric protein abolishes passive cutaneous anaphylaxis in mice. *Clinical Exp. Immunol.* 119:398-403, 2000.
41. Azar, Y. and Lorberboun-Galski, H. GnRH-Bik/Bax/Bak chimeric proteins target and kill adenocarcinoma cells; the general use of pro-apoptotic proteins of the bcl-2 family as novel killing components of targeting chimeric proteins. *Apoptosis*, 5, 531-542, 2000.
42. Ben-Yehudah, A., Prus, D. and Lorberboun-Galski, H. i.v. administration of L-GnRH-PE66 efficiently inhibits growth of colon adenocarcinoma xenografts in nude mice. *Int J Cancer*, 92, 263-8, 2001.
43. Belostotsky, R. and Lorberboun-Galski, H. Apoptosis-Inducing Human-Origin Fce-Bak chimeric proteins for targeted elimination of Mast cells and Basophils: A new approach for Allergy treatment. *J. Immunol.* 167: 4719-4728, 2001.
44. Ben-Yehudah, A., Aqelian, R., Belostotsky, R., Azar, Y. and Lorberboun-Galski, H. Utilizing chimeric proteins for exploring the cellular fate of endogenous proteins. *BBRC.* 290: 332-338, 2002.

45. Rami Aqeilan, Rotem Kedar Ahmi Ben-Yehudah and Haya Lorberbourn-Galski. Mechanism of action of IL2-Bax; An apoptosis-inducing chimeric protein targeted against Interleukin-2 receptor expressing cells. *Biochem. J.*, 370, 129-140, 2003.
46. Ahmi Ben-Yehudah, Rami Aqeilan, Dana Robashkevich and Haya Lorberbourn-Galski. Utilizing apoptosis for targeted cancer therapy by a new GnRH-DFF40 chimeric protein. *Clinical Cancer Research*. 9, 1179-1190, 2003.
47. Malamud V., Vaaknin A., Abramsky O., Mor M., Burgess LE., Ben-Yehudah A. and Lorberbourn-Galski H. Tryptase activates peripheral blood mononuclear cells causing the synthesis and release of TNF- α , IL-6 and IL-1 β : possible relevance to multiple sclerosis. *J. Neuroimmunology*, 138, 115-122, 2003.
48. Belostotsky, R. and Lorberbourn-Galski, H. Utilizing Fc epsilon-Bak chimeric protein for studying IgE-Fc epsilon RI interactions. *Clinical Immunology*, 110, 89-99, 2004.

Review Articles:

1. Ahmi Ben-Yehudah, Ruth Belostotsky, Michal Lichtenstein, Rami Aqeilan, Ronen Abady and Haya Lorberbourn-Galski. Chimeric proteins as candidates for cancer Treatment. *Drugs of the future* 27, 851-861, 2002. Invited Review.
2. Ahmi Ben-Yehudah and Haya Lorberbourn-Galski. Targeted Cancer Therapy with GnRH-Chimeric Proteins. *Expert Rev. Anticancer Ther.*, 4, 151-161, 2004. Invited Review (peer Reviewed).

Book Chapters:

1. Ben Ezra, D., Yarkoni, S., Maftzir, G. and Lorberboum-Galski, H.: Cytokines and growth factors. Early gene expression during angiogenic stimuli. In *Angiogenesis: Models, Modulators and clinical applications*. Maragoudakis ME (Ed.). Plenum Press, New York, 1998, pp 349-353.
2. Ben-Yehudah, A. and Lorberboum-Galski, H.: GnRH-based chimeric proteins: future targeting therapy for adenocarcinomas? In "Current Topics in Biochemical Research" Research Trends, 4, 49-59, 2001.
3. Lorberboum-Galski, H.: Ligand-receptor interactions studied with chimeric proteins. In "Chimeric toxins: Mechanisms of action and therapeutic applications". Lorberboum-Galski H and Luzarovici P (Eds) Taylor&Francis, New York, 2002, pp. 135-147.
4. Ben-Yehudah, A., Belostotsky, R., Aqeilan, R., Azar, Y., Steinberger, I., Fishman, A., Nechushtan, A., Yarkoni, S., and Lorberboum-Galski, H.: Chimeric proteins: a novel approach for eliminating specific cell populations for targeted human therapy. In "Chimeric toxins: Mechanisms of action and therapeutic applications". Lorberboum-Galski H and Luzarovici P (Eds). Taylor&Francis, New York 2002, pp. 148-167.

Book

Co-editor of a book -- "Chimeric toxins: Mechanisms of action and therapeutic applications". Lorberboum-Galski H and Luzarovici P (Eds). Taylor&Francis, New York, 2002.